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Wayne H. Jens
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Newport, Michigan 48186
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August 21, 1984
EF2-69668

Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

- Reference: (1) Fermi 2
NRC Docket No. 50-341
- (2) Letter, W. H. Jens to J. G Keppler,
April 20, 1984, EF2-67809

Subject: Final Report of 10CFR50.55(e) Item 119
"Design Deficiency in Conduit Support
Standard ED-14-3"

This is Detroit Edison's final report of Item 119,
"Design Deficiency in Conduit Support Standard ED-14-3."
Item 119 was originally reported as a potential deficiency
on March 13, 1984, and was subsequently documented in
Reference (2).

Description of Deficiency

Giffels Associates, Inc., reported a possible design
deficiency involving conduit support STD-ED-14-3 of Edison
Specification 3071-128. Standard ED-14-3 is a simple
cantilever type conduit support. Supports of this type may
not have adequate structural capacity to support the maximum
allowable loads specified in Specification 3071-128.

In the analysis of the Type 14-3 support, performed by
Giffels Associates, Inc., seismic torsional stresses were
not considered. A further investigation revealed that these
stresses were also not considered for other supports
identified in Specification 3071-128. The torsional loads

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Mr. James G. Keppler
August 21, 1984
EF2-69668
Page 2

arise from the eccentricity of the supported conduit(s) to the unistrut centerline. Proper consideration of these stresses in the analysis substantially reduces the allowable loads that are delineated in the specification. This deficiency is limited to conduit supports involving unistrut members i.e., supports identified in Specification 3071-128.

Analysis of Safety Implications

General Design Criteria (GDC) 2 of Appendix A to 10CFR50 requires that structures important to safety be designed to withstand the effects of natural phenomena. These hangers are used to support both safety and nonsafety-related conduit. As such, their failure during a seismic event could cause damage to safety related systems either by failure of the safety related cable being carried by the conduit or by possibly falling on some safety related components.

Corrective Action

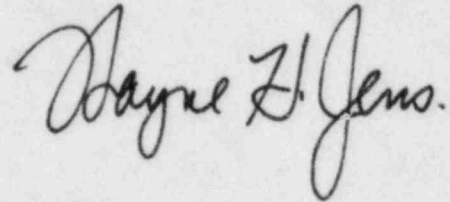
Giffels Associates, Inc. reviewed Std. ED-14 considering the effect of torsion on cantilevered unistrut arms. DCN-10550 was issued to revise the allowable loads for Stds. ED-14-1,2,3, and 5 only. All existing Type 14 supports (622 total) were reviewed for compliance to DCN-10550. Of these, only four did not meet the new requirements. Three of these were reworked and one was accepted as-is.

Giffels Associates, Inc. made a comprehensive review of Specification 3071-128, upon Detroit Edison's request, to identify and evaluate all other ED standards which allowed the use of unistrut arms without consideration of torsional stress. DCN-10592 was issued as a result of this review to revise the allowable loads for unistrut arms shown in Tables IV and V of Std. ED-2-4, and also to revise allowable loads for support types ED-S8-2,3 and 4. The Edison conduit/equipment design group completed a design review program to identify all existing conduit supports that did not meet the new DCN-10592 allowable load criteria. Seventy-five such supports were identified. Twenty of these required rework and fifty-five were accepted as-is. All design changes necessary to rework these hangers are now issued.

Mr. James G. Keppler
August 21, 1984
EF2-69668
Page 3

This is Detroit Edison's final report on this item. If you have questions concerning this matter, please contact Mr. Lewis P. Bregni, (313) 586-5083.

Sincerely,

A handwritten signature in cursive script that reads "Wayne H. Jones". The signature is written in dark ink and is positioned to the right of the typed name.

cc: Mr. P. M. Byron
Mr. R. C. DeYoung
Mr. R. C. Knop